EPA HQ Cost Estimate 1b.
Shoreline Excavation

In order to mechanically excavate the material from the MLLW mark to the MHHW mark we will approach this from two different ways.

The area from the MLLW contour to a point within 5 ft. of the shore (downgradient of MHHW) will be excavated from the water using a barge-mounted longstick and scows. The scows will be pushed to Area C and unloaded. A crew will add polymer (and/or Portland cement or similar) to the dredged mud, if needed, to stabilize the mud to meet the paint filter test. The stabilized material will be loaded into trucks for off-site disposal. Backfill material will be stockpiled at Area C or other appropriate location. This water-based work will be limited by tide.

The work from the 5-ft. mark to the MHHW contour will be completed with a land-based operation of a long-stick and trucks. This will include construction of haul roads to the areas that need to be excavated. The excavated material will be stockpiled and allowed to drain before being loaded into trucks for off-site disposal. The excavated areas will be sampled, and once cleared will be backfilled and restored. Once restoration is completed in an area, the haul road will be removed and the process will continue in the next area until all areas are completed. The following pricing will be broken down into the two different approaches.

We will assume a production rate of 250 cy/day. The actual rate will depend on tides and how much stabilization will be required. We will also assume that property access agreements will be updated and in place before work begins.

1. Water-based Excavation.
   A. Equipment.
      i. (1) long-stick excavator.
      ii. (4) flex-floats for constructed base.
      iii. (4) small hopper scows.
      iv. (1) excavator to unload scows.
      v. (4) push boats.
      vi. (1) unloading area (Area C).
   B. Labor.
      i. (3) operating engineers (excavators and 1 boat).
      ii. (8) laborers (3 boats, 1 on float, 4 on shore).
      iii. (2) foremen (1 on water, 1 on land).
      iv. (1) superintendent.
   C. Material.
      i. Polymer.
      ii. Portland cement.
      iii. fuel, PPE, misc. materials.
   D. Transportation & Disposal.

2. Land-based Excavation.
    A. Equipment.
        i. (1) long-stick excavator.
        ii. (1) loader.
        iii. (1) dozer.
        iv. (1) roller.
    B. Labor
        i. (4) operating engineers.
        ii. (5) laborers.
        iii. (2) foremen (1 for excavation, 1 for road support).
        iv. (1) superintendent.
    C. Material.
        i. filter fabric.
        ii. dense grade (for roads).
        iii. equipment mats (poly).
        iv. crane mats (wood).
        v. poly sheeting.
        vi. fuel, PPE, misc. materials.
    D. Transportation & Disposal.

3. Land-based Backfilling.
    A. Equipment.
        i. (1) long-stick excavator.
        ii. (1) loader.
        iii. (1) dozer.
        iv. (1) roller.
    B. Labor
        i. (4) operating engineers.
        ii. (5) laborers.
        iii. (2) foremen (1 for excavation, 1 for road support).
        iv. (1) superintendent.
    C. Material.
        i. filter fabric.
        ii. 3” minus (for backfill).
        iii. equipment mats (poly).
        iv. crane mats (wood).
        v. topsoil.
        vi. Coir facine logs.
        vii. Plants.
        viii. fuel, PPE, misc. materials.

4. Water-based Backfilling.
    A. Equipment.
        i. (1) long-stick excavator (unload).
        ii. (4) flex-floats for constructed base.
        iii. (4) small hopper scows.

iv. (1) excavator to load scows.
v. (4) push boats.

B. Labor.
   i. (3) operating engineers (excavators and 1 boat).
   ii. (5) laborers (3 boats, 1 on float, 1 on shore).
   iii. (2) foremen (1 on water, 1 on land).
   iv. (1) superintendent.

C. Material.
   i. sand.
   ii. fuel, PPE, misc. materials.